

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE (REV 10-95)		ATTORNEY'S DOCKET NUMBER <b>D-42978-01</b>
<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>		U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <b>09/445640</b>
INTERNATIONAL APPLICATION NO. <b>NZ98/00094</b>	INTERNATIONAL FILING DATE <b>03/07/98</b>	PRIORITY DATE CLAIMED <b>07/07/97</b>
TITLE OF INVENTION <b>APPARATUS AND METHOD FOR MAKING BAGS OF DIFFERENT DIMENSIONS</b>		
APPLICANT(S) FOR DO/EO/US <b>WARD, Simon R. and KOKE, John P.</b>		
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</p> <ul style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2)) <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ul> </li> <li>6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</li> <li>8. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ul> </li> <li>9. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>10. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</li> <li>12. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> </ul> <p>Items 13 to 18 below concern document(s) or information included:</p> <ul style="list-style-type: none"> <li>13. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>15. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.</li> <li>16. <input type="checkbox"/> A substitute specification.</li> <li>17. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>18. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail</li> <li>19. <input type="checkbox"/> Other items or information:</li> </ul>		

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <b>09/445640</b>	INTERNATIONAL APPLICATION NO. <b>NZ98/00094</b>	ATTORNEY'S DOCKET NUMBER <b>D-42978-01</b>
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20. The following fees are submitted:.	<b>CALCULATIONS PTO USE ONLY</b>
<b>BASIC NATIONAL FEE ( 37 CFR 1.492 (a) (1) - (5) :</b>	
<input type="checkbox"/> Search Report has been prepared by the EPO or JPO .....	\$840.00
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) .....	\$670.00
<input type="checkbox"/> No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) .....	\$760.00
<input checked="" type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO .....	\$970.00
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) .....	\$96.00
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>	<b>\$970.00</b>

Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)).		<input type="checkbox"/> 20	<input type="checkbox"/> 30	<b>\$0.00</b>
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<b>CLAIMS</b>	<b>NUMBER FILED</b>	<b>NUMBER EXTRA</b>	<b>RATE</b>	
Total claims	11 - 20 =	0	x \$18.00	<b>\$0.00</b>
Independent claims	2 - 3 =	0	x \$78.00	<b>\$0.00</b>
Multiple Dependent Claims (check if applicable).			<input type="checkbox"/>	<b>\$0.00</b>
<b>TOTAL OF ABOVE CALCULATIONS =</b>			<b>\$970.00</b>	

Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable).	<input type="checkbox"/>	<b>\$0.00</b>
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<b>SUBTOTAL =</b>			<b>\$970.00</b>
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Processing fee of <b>\$130.00</b> for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)).	<input type="checkbox"/> 20	<input type="checkbox"/> 30	<input type="checkbox"/> +	<b>\$0.00</b>
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<b>TOTAL NATIONAL FEE =</b>			<b>\$970.00</b>
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Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).	<input type="checkbox"/>	<b>\$0.00</b>
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<b>TOTAL FEES ENCLOSED =</b>			<b>\$970.00</b>
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			<b>Amount to be: refunded</b>	\$
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<input type="checkbox"/> A check in the amount of	to cover the above fees is enclosed.		
<input checked="" type="checkbox"/> Please charge my Deposit Account No. <b>07-1765</b>	in the amount of <b>\$970.00</b>	to cover the above fees.	
A duplicate copy of this sheet is enclosed.			

<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <b>07-1765</b>	A duplicate copy of this sheet is enclosed.
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NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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SIGNATURE  
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REGISTRATION NUMBER  
**December 8, 1999**  
DATE

09/445640

420 Rec'd PCT/PTO 08 DEC 1999

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Lisa A. Brown  
LISA A. BROWN

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ward et al. Group Art Unit:  
Serial No.: Examiner:  
Filing Date: Docket No.: 42978-01  
Title: Apparatus and Method for Making Bags of Different Dimensions

**PRELIMINARY AMENDMENT**

Assistant Commissioner For Patents  
Washington, D. C. 20231

Sir:

Please amend the above-identified application as follows:

**IN THE CLAIMS**

Please cancel all the original claims.

Please add the following claims:

14. An apparatus for providing packaging for products of varying sizes, comprising:
  - a) a first film source and a second film source, the first and second film sources each having film of a defined width, wherein the width of the film of the first film source is different from the width of the film of the second film source, and wherein the film of the first film source, and the film of the second film source, are each in the form of a tubular lay flat film ;
  - b) a means for selecting a film source based on the size of the product to be packaged, and
  - c) a sealing mechanism for creating a seal in the tubular lay flat film of the first film source, or the tubular lay flat film of the second film source.
15. The apparatus of claim 14 further comprising a means for selecting a film length.

16. The apparatus of claim 14 further comprising a means for cutting the tubular lay flat film of the first film source, or the tubular lay flat film of the second film source.

17. The apparatus of claim 14 further comprising a first means for inputting which enables a user of the apparatus to use the means for selecting the film source.

18. The apparatus of claim 15 further comprising a second means for inputting which enables a user of the apparatus to use the means for selecting a film length.

19. The apparatus of claim 14 further comprising a means for remotely sensing to determine product size, and a means to control the means for selecting the film source.

20. The apparatus of claim 15 further comprising a means for remotely sensing to determine product size, and a means to control the means for selecting a film length.

21. The apparatus of claim 14 further comprising a printer for printing onto the tubular lay flat film of the first film source, or the tubular lay flat film of the second film source.

22. The apparatus of claim 21 further comprising a printer shuttle which enables the printer to move to the required film.

23. The apparatus of claim 14 wherein the film of at least one of the first and second film sources is heat shrinkable.

24. A method for providing packaging for products of varying sizes using an apparatus having a first and second film source, the first and second film source each having film of a defined width, wherein the width of the film of the first film source is different from the width of the film of the second film source, characterised by the steps of:

- determining the size of the product to be packaged;
- determining from which film source film is to be dispensed in accordance with the product size;
- determining the length of the film to be dispensed in accordance with the product size;
- dispensing film of the required width and length;
- sealing the film; and
- cutting the film to produce a container of the desired length.

Remarks

New claims 14 to 24 are now introduced into the present application to replace the original claims, some of which had multiple dependencies.

Early allowance of the newly introduced claims is solicited.

Respectfully submitted,



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Date

**APPARATUS AND METHOD FOR MAKING BAGS OF DIFFERENT DIMENSIONS****TECHNICAL FIELD**

This invention relates to bag making dispensing apparatus.

**BACKGROUND ART**

5      Packaging apparatus for providing packaging for products of various sizes is known. A representative sample of this apparatus is discussed below.

US Patent No. 3553934 (Johnson) discloses machinery that makes bags of different widths and lengths from folded film dispensed by a single dispenser.

10     Unfortunately, there are a few problems with this apparatus. If products are of varying sizes, then the depth of the folded film must be such that larger bags for accommodating larger products can be made. However, when smaller bags are cut from the film there is considerable wastage.

15     US Patent No. 4179055 (Milner) discloses a device having several supply rolls each having continuous strip of plastic material in the form of bags connected to each other at scored lines. The bags are of differing size from roll to roll. A problem with this device is that there is no flexibility provided by the user in choosing bag length. Only discrete lengths are available according to which supply roll is chosen. Thus, it is possible that products of greater length than average could not be provided with a bag of sufficient size to contain the 20 products. Alternatively, there may be considerable wastage occurring as a result of only discrete lengths being able to be chosen.

A similar problem is present in the apparatus disclosed in US Patent No. 4425988 (Amplas, Inc). This discloses apparatus that makes bags of varying lengths from

tubular lay flat film. However, the width of the tubular lay flat film restricts the overall bag size and variations that can be offered. Again wastage occurs.

US Patent No. 4505092 (Hobart Corporation) discloses apparatus which addresses the wastage problem. This apparatus has two film dispensers containing stretch 5 wrap film of different widths. Product passes through the apparatus prior to being packaged. If the product activates either a discrete height or width mechanical sensor, then the product is wrapped in the film having the greater width.

Unfortunately, this apparatus is not suitable for all situations. For the pack to be airtight seals must be formed through wrinkle-free areas of the film and show no 10 weakness at the intersection of seals. Folding of film into a wrinkle free format suitable for airtight seals is relatively easy with regular rectangular shaped products but extremely difficult with irregular shaped products such as cuts of meat.

Often it is preferred to place product into a discrete sized package. If this 15 package is made from shrink film, then the film can be heated to cause the film to shrink around the product, forming intimate contact which gives an aesthetically pleasing appearance to the packaged product.

Another problem with this apparatus is that it cannot be used for packaging as a post process. That is, the product must pass through the wrapping machine to be 20 packaged. This is in contrast to packaging as a post process whereby the package is substantially formed before product is inserted into it.

It would be desirable if the packaging could be provided for products of varying size which are then later on placed in that packaging. This is particularly useful if the products are of a large size or awkward shape which cannot be readily fed

through a packaging machine. Seals should be minimised providing for subsequent airtight (vacuum) packaging.

Yet another problem with the apparatus disclosed in US Patent No. 4505092 machinery is that the discrete mechanical sensors are only of value in selecting 5 the width of film to be used when the products are of a regular shape. This is because an irregular shaped product may not trigger the mechanical sensors, yet still be of a size requiring the greater film width.

It is an object of the present invention to address the above problems, at least provide the public with a useful choice.

10 Further objects and advantages of the present invention will become apparent with the following description which is given by way of example only.

#### **DISCLOSURE OF INVENTION**

An apparatus for providing packaging for products of varying sizes 15 including  
a) a first and second film source, each film source having film of a defined width, wherein the width of the first film source is different from the width of the film of the second film source; and  
20 b) the means for selecting a film source based on the size of the product to be packaged,

the apparatus characterised in that  
25 the film of the first film source, and the film of the second film source are each in the form of a tubular lay flat film

The film sources may be in any suitable format.

For example, the film sources may have film presented in a flip-flop configuration, that is the film is substantially flat and repeatedly folded back on itself in accordion like fashion.

5 However, preferred embodiments of the present invention each film source has film wound on to a roll.

Reference throughout the specification should now be made to use of the present invention with two film sources. However, it should be appreciated that the present invention can use more than two film sources depending on the desired 10 end use.

The film used may be any type, but preferably is a polymeric, thermoplastic film, or preferably a heat shrinkable film.

The means for selecting the film source can be in any appropriate form and will typically use standard control technology including, eg a programmable logic 15 control (PLC) and switching means.

The use of at least two film sources each having tubular lay flat film of different widths overcomes a number of the problems associated with the prior art.

The ability to choose the width of the tubular lay flat film based on the size of product saves considerably on wastage.

20 Another advantage of the present invention is that the use of tubular lay flat film enables discrete bags to be formed. The term bag includes film enclosures including end sealed and side sealed bags, pouches, casings etc.

Discrete bags enable product to be placed into the bag after the bag has been formed. This enables products having large sizes or irregular shapes to be readily packaged without passing through the machinery that forms the package as such.

Another advantage of the present invention is that the tubular lay flat film can be

5 oriented and rendered heat shrinkable during the manufacture of the film. Thus, after a product is placed into a package made from heat shrinkable tubular lay flat film, and evacuated, the film can be heated to induce shrinkage of the film, eg, by hot air or hot water, and provide intimate contact of the film with the product providing an aesthetically pleasing presentation.

10 In a preferred embodiment of the present invention, the packaging apparatus also includes a means for selecting the length of the film. This means enables the machine to dispense different lengths of tubular lay flat film. Thus, this mechanism enables even greater flexibility in the size of the package that can be produced by the machine, as a package can have variable width and length.

15 The widths of the film chosen will naturally be discrete according to which film source is used. However, while discrete lengths are also possible, the invention in some embodiments allows the lengths to be infinitely adjustable, giving considerable flexibility in product package size.

It should be appreciated that by having the ability to place the product in the

20 package after the package is created, the dimensions of the package can be chosen to allow for product orientation, that is, a package size can be chosen so that there is minimal wastage of space when the product is orientated correctly within the formed bag or other package type.

While it is possible that some embodiments of the present invention may provide

25 for an open ended tube for use in the package, preferred embodiments include a

means for sealing to create a seal along one end of the dispensed tube stock. Thus, the present invention can provide bags which are open only at one end allowing for the later insertion of product.

The package can be separated from the film dispenser in a number of ways, 5 including a hot wire, manual use of a knife and so forth. However, in preferred embodiments, the packaging apparatus includes a cutting mechanism for cutting the dispensed tubular lay flat film.

One or more means for cutting and/or sealing can also be used beneficially in connection with the present invention. For example, film from the selected film 10 source can be moved to a single cutting/sealing mechanisms.

Alternatively there may be a cutting/sealing mechanism for each film source – or any other ratio as required.

There can alternatively be a cutting means and a separate, discrete, sealing means.

While the present invention may in some embodiments use discrete mechanical 15 switches to trigger the length and/or width selection mechanisms, this is not particularly useful if the product to be packaged is of an irregular shape.

Therefore, in some embodiments there is provided manual input means enabling the user of the packaging apparatus to use the width and/or length selection mechanism.

20 For example, an operator of the packaging apparatus may view the product to be packaged and manually select which film dispenser to use (and hence the width of the tubular lay flat film) and/or choose the length - to provide a package of an appropriate size for the product. With time, a manual operator can assess the required length and width parameters quickly and accurately.

In addition to, or instead of the manual input means, some embodiments of the present invention can include remote sensing to determine product size and control means to operate the means for selecting the first and second film source and thus select the desired width and/or length.

5 The remote sensing can be in any suitable form including any sensing means conventionally known in the art. For example, the remote sensing may include infra-red, capacitive, ultrasonic, optical or any other suitable sensors. The remote sensing means can obtain information about the product size to enable the appropriate bag size to be selected. For example, the height of the product is just 10 as important as the width of the product in determining the width of the film to be selected. The same is true for the length of the product.

Once the sensors means has determined the product size, this information can be provided to the control means to operate the means for selecting the first and second film source and produce a package of a suitable size for the product.

15 In preferred embodiments of the present invention there is provided some intelligence in the machine that takes into account possible orientation of the product within the package, thus choosing the smallest package size possible to fit a product of the parameters sensed.

20 The machine can be operated on a continuous, intermittent or on-demand basis as required.

In some embodiments of the present invention there may be provided a printer which can print onto the film.

Printers are a considerable expense and also bulky. Therefore in preferred embodiments only one printer is supplied for each packaging apparatus. Thus,

there may be provided a printer shuttle means which enables the printer to move to the required film dispenser.

Alternatively, film from the chosen film source may be moved to a single printer instead.

5 According to another aspect of the present invention, there is provided a method for providing packaging for product of various sizes using an apparatus including a first and second film source, each film source having film of a defined width, wherein the width of the film of the first film source is different from the width of the film from the second film source; characterised by the steps of:

10 a) determining the size of the product to be packaged, and

b) using a means for selecting a film source to determine from which source film is to be used in accordance with the product size, and

c) using a means for selecting a film length to determine the length of the film to be dispensed in accordance with the product size, and

15 d) dispensing film of the required length and width, and

e) sealing the film, and

f) cutting the film to produce a package of the desired length.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Aspects of the present invention will now be discussed by way of example only  
5 with reference to the accompanying drawings in which:

Figure 1 is a planned view of an apparatus in accordance with one embodiment of the present invention, and

10 Figures 2 and 3 are side and end views respectively of Figure 1, and

Figure 4 is a general elevation view of one component of an adjacent set of sealing and cutting apparatus of the present invention, and

15 Figures 5 and 6 are diagrammatic elevations of other aspects of apparatus in accordance of the present invention.

20 Figure 7 is a detailed cross-sectional view of apparatus in accordance with another embodiment of the present invention.

**BEST MODES FOR CARRYING OUT THE INVENTION**

Figure 1 illustrates packaging apparatus in accordance with the present invention having two film dispensers A and B.

25 The free ends of the film 2 (see Figures 2 and 3) are fed from the film sources in the form of rolls A and B adjacent sealing and cutting heads generally indicated by arrow 1. Each of the sealing and cutting heads provides means by which a

transverse seal can be made in the film 2 and the film subsequently cut. The relative positions of the sealing and cutting means determine the bag orientation, that is, whether the bag is dispensed opened or closed end first.

In this embodiment, as bags are dispensed on a vertical plane it is preferable for 5 the ends of the formed bags to be temporarily secured by gripping means such as rolls, clamps or suction cups (not shown).

It should be appreciated that in Figure 3 only roll A can be seen as the view is looking from the left end of the apparatus shown in Figure 1.

Figure 4 is a detailed side view of one half of the apparatus illustrated in Figures 10 1, 2 and 3.

A support arrangement generally indicated by arrow 20 is provided for a roll of tubular lay flat film 21. The tubular lay flat film 21 is fed via rollers 22, 23 to a sealing and cut assembly generally indicated by arrow 24.

The support arrangement 20 is provided with a braking means in the form of an 15 adjustable shoe brake arrangement 25.

The sealing and cutting assembly 24 includes an alignment roller 26, a nip roller assembly indicated by arrow 27, a sealing and cutting head indicated by arrow 28, drive means generally indicated by arrow 29 and dispensing means generally indicated by arrow 30.

20 In this embodiment, the nip roller assembly 27 includes a fixed roller 32, a reciprocal roller 33 which can be advanced and retracted relative to the fixed roller 32 by cylinder 34. The assembly further includes a clamping and sealing head 35, anvil 36 and a cutter 37. The head 35 and cutter 37 are advanced and retracted by a cylinder 38.

The drive 29 includes a motor 39, and a transmission including wheels 40, and a belt 41.

Dispensing means 30 includes two spaced wall members 42 defining a passage for a bag 31 formed by the sealing and cutting head 24.

5 The apparatus illustrated is for dispensing bags from an "overhead" position and as such it is desirable that means such as rollers, suction cups or the like be provided so a bag can be suspended in the dispensing means 30 for manual release. In this embodiment, a cylinder driven suspension clamp 43 operates against an anvil face 44 to perform this function. In operation, the nip roll assembly 27 is controlled to advance the film 21, either continuously, 10 intermittently or on an on-demand basis. The sealing and cutting head 28 is operable to seal and cut a selected length of film to produce bag after bag, and on an on-demand mode, the bag is subsequent manual release by clamp 43.

To form a bag, film 21 is advanced by the nip roller assembly 27, upper and 15 lower jaws associated with the head 35 secure the film leaving a space between for cutter 37 to be advanced. The lower jaw makes a transverse seal in the film and the film is released in the form of a bag 31 by advancing cutter 37.

The clamp can be operated to clasp the sealed and released end of the bag 31 against anvil face 44. At that stage, the end of the bag 31 extends from the 20 dispensing means 30.

Figures 5 and 6 of the drawings illustrate various means by which bag selection and length can be made automatically or semi-automatically.

For example, in Figure 5 length determining means 3 associated with control means (not shown) for determining bag length are provided. The device can be in 25 a fixed position or can be free for an operator to position the same.

In another example illustrated by Figure 6, a weighing device and length determining device is associated via control means with adjacent sealing and cutting heads 1.

The size input device may be a vision system, and may include photo eyes, 5 proximity sensors and the like working independently or in conjunction with one another.

New Zealand Patent Application No. 286910/299534 describes one form of length measuring device which could be used with the present invention.

Figure 7 is a detailed cross-sectional view of mechanism of apparatus 10 manufactured in accordance with one aspect of the present invention. In Figure 7, it can be seen that three film sources may be used. In operation, two of the three guiding systems for the sources may be retracted (not shown) so that only the chosen film will be in contact with common nip rollers, sealing and cutting unit.

Aspects of the present invention have been described by way of example only and 15 it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof as defined in the appended claims.

CLAIMS

1. An apparatus for providing packaging for products of varying sizes including
  - a) a first and second film source each film source (A & B), each film source having film of a defined width, wherein the width of the first film source (A) is different from the width of the film of the second film source(B); and
  - b) the means (3) for selecting a film source based on the size of the product to be packaged, whercin

the film of the first film source (A), and the film of the second film source (B) are each in the form of a tubular lay flat film (21).

The apparatus characterised in that

the apparatus includes a sealing mechanism (24) for creating a seal in the tubular lay flat film (21).

2. The apparatus as claimed in claim 1 which includes a means for selecting a film length (3).
3. The apparatus as claimed in either claim 1 or claim 2 which includes a means (24) for cutting the tubular lay flat film (21).
4. The apparatus as claimed in any one of claims 1 to 3 which includes means for inputting which enables a user of the apparatus to use the means for selecting the film source (3 and 4).
5. The apparatus as claimed in any one of claim 2 to 4 which includes means for inputting which enables a user of the apparatus to use the means for selecting a film length (3).

6. The apparatus as claimed in any one of claims 1 to 5 which includes a means for remotely sensing to determine product size, and a means to control the means (3 and 4) for selecting a film source.
7. The apparatus as claimed in any one of claims 2 to 6 which includes a means for remotely sensing to determine product size, and a means to control the means (3) for selecting a film length.
8. The apparatus as claimed in any one of claims 1 to 7 which includes a printer for printing onto the tubular lay flat film (21).
9. The apparatus as claimed in claim 8 which includes a printer shuttle which enables the printer to move to the required film(21).
10. The apparatus as claimed in any one of claims 1 to 9 wherein the film is heat-shrinkable.
11. A method for providing packaging for product of various sizes using apparatus having a first and second film source (A and B) having film of a defined width, wherein the width of the film of the first film source (A) is different from the width of the film of the second film source (B), characterised by the steps of:
  - a) determining the size of the product to be packaged,
  - b) using a means (3 and 4) for selecting a film source to determine from which dispenser film (21) is to be dispensed in accordance with the product size,
  - c) using a means for selecting a film (3) length to determine the length of the film to be dispensed in accordance with the product size,
  - d) dispensing film of the required width and length (3 and 4),
  - e) sealing the film (24); and
  - f) cutting the film (24) to produce a bag of the desired length.
12. The apparatus substantially as herein described with reference to and as illustrated by the accompanying drawings.

13. A method of providing packaging substantially as herein described with reference to and as illustrated by the accompanying drawings.

1 / 4

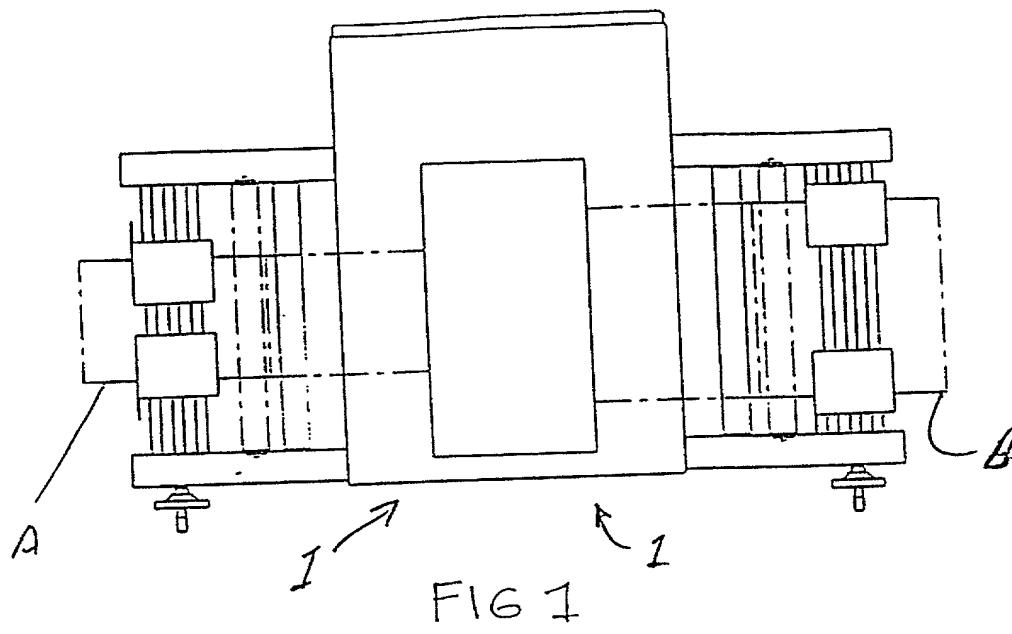


FIG 1

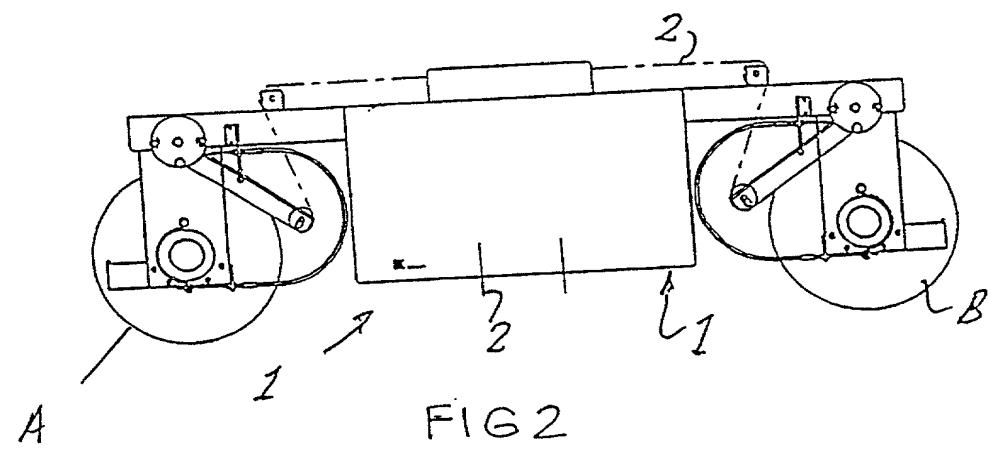


FIG 2

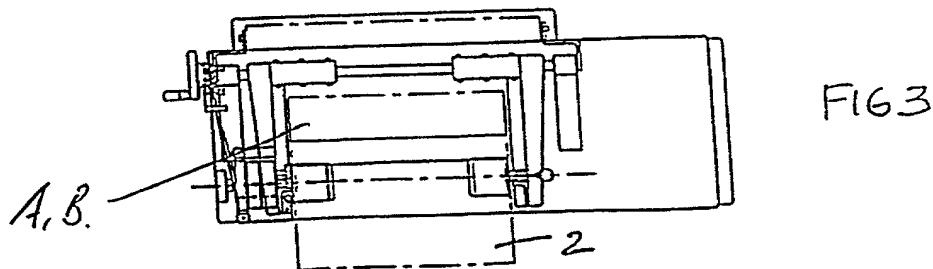


FIG 3

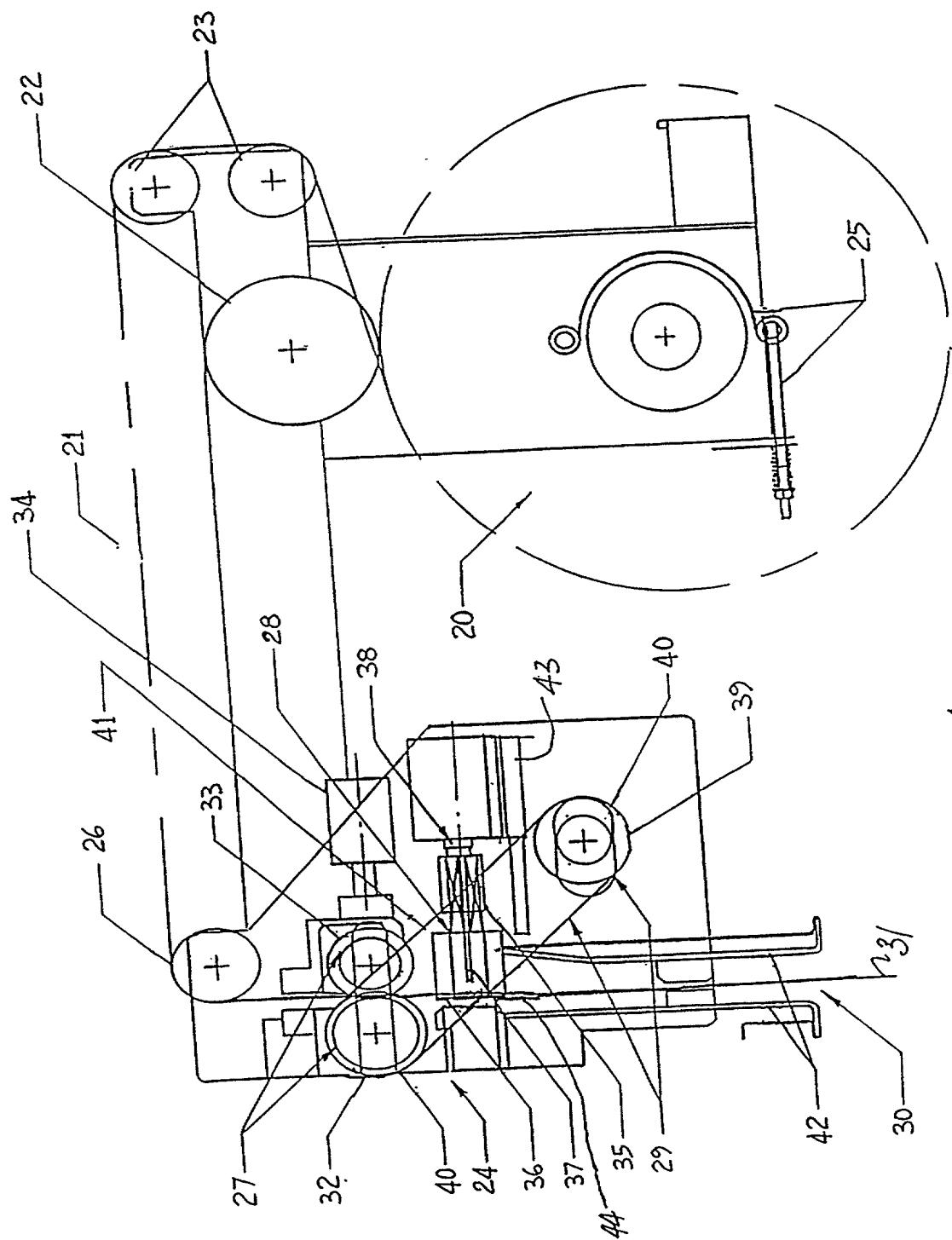


FIG. 4

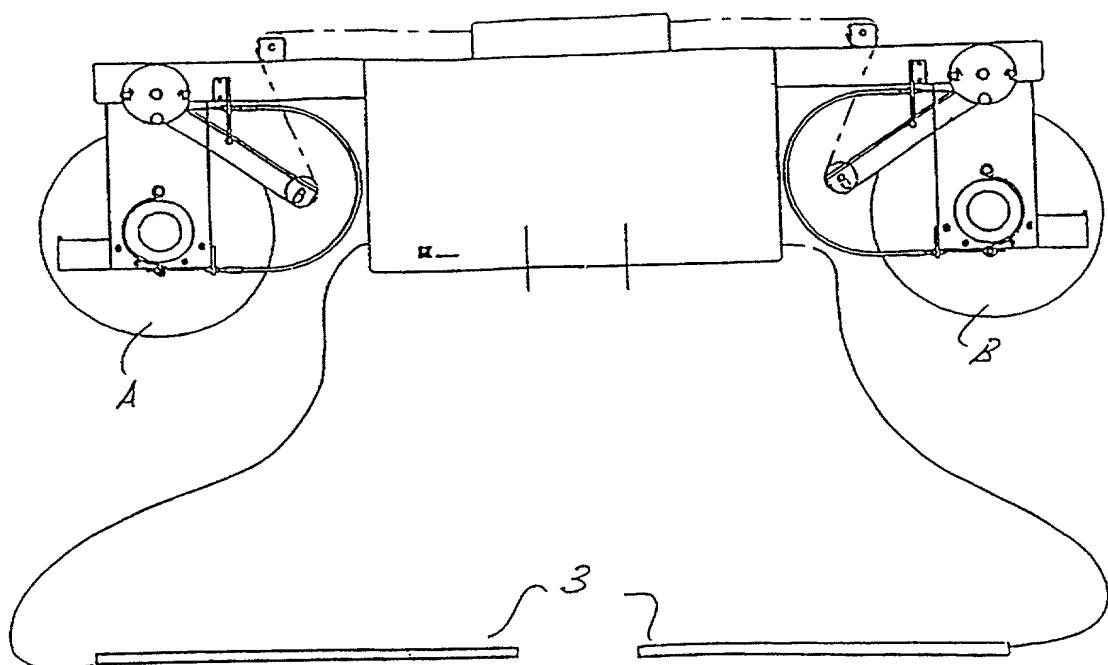


FIG. 5

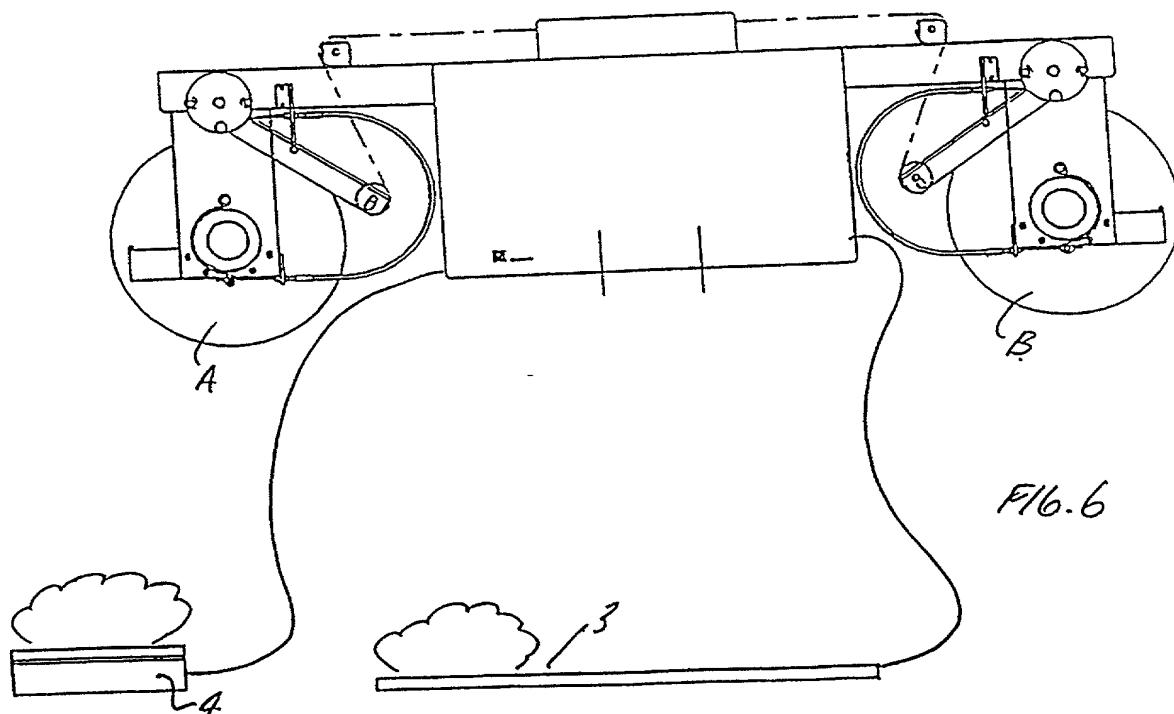
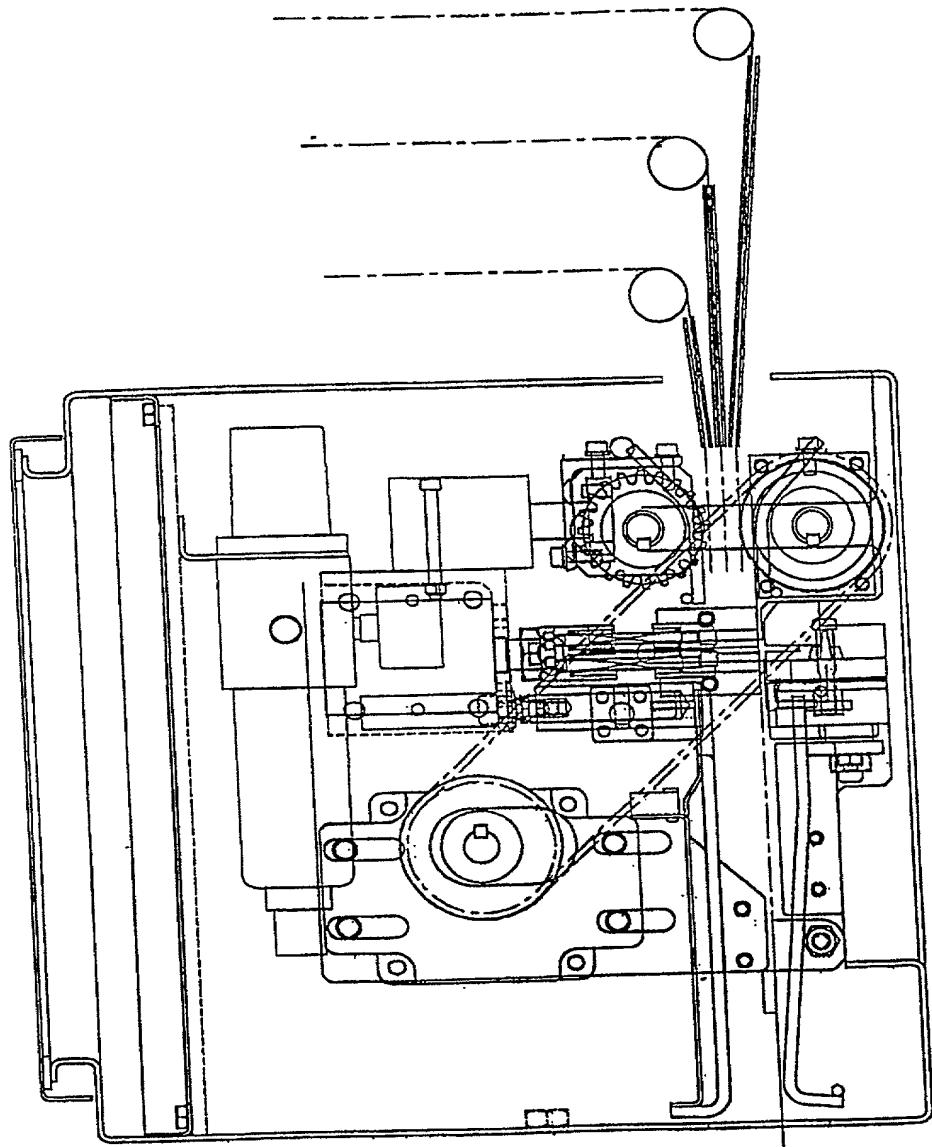


FIG. 6

FIGURE 7



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(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

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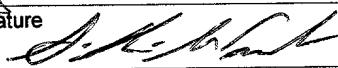
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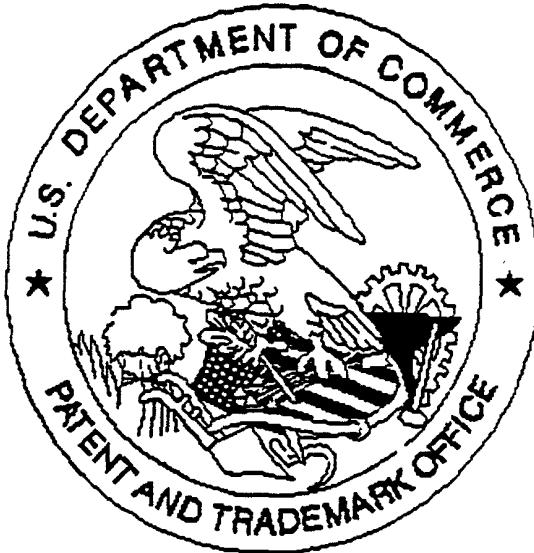
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